

## SARASOTA LANDFILL, FLORIDA

# Mitigating the risks of groundwater contamination during expansion of Sarasota Municipal Landfill



**Industry:** Waste  
**Sub-industry:** Landfills  
**Location:** Sarasota, Florida  
**Product:** **GSE® HD**  
**BENTOLINER®**

## Overview

The Central County Solid Waste Disposal Complex (CCSWDC) in Sarasota County plays a pivotal role in managing residential, municipal, and commercial waste from the surrounding areas. To accommodate growing waste management needs and enhance environmental protection, the CCSWDC undertook a significant expansion known as the Phase II Class I Landfill Expansion.

This expansion project, covering a site size of 62 acres (25 hectares), was designed by HDR Engineering and utilized the expertise of Glover Construction as the general contractor. Geo-Synthetics Inc. (GSI) was chosen as the installer, with Solmax supplying the geomembrane liner and geosynthetic

clay liner (GCL). The project aimed to address current and future community needs while maintaining rigorous environmental safeguards.

## Challenge

The expansion project was strategically located just 20 ft (6 m) above sea level and surrounded by protected wetlands. These factors demanded a highly effective containment system to mitigate the risk of groundwater contamination. Additionally, Sarasota County required a flexible design to allow for future vertical expansion, potential integration of leachate recirculation, bioreactor operations, and methane reuse systems. The project also had to adhere to strict state and federal regulations.

**The project owner wanted a long-term system that would provide a robust containment solution.**

## CASE STUDY

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## Solution

HDR Engineering designed an advanced containment system to meet these challenges, which included:

1. **Foundation and liner system:** The system began with a **BENTOLINER GCL** (geosynthetic clay liner), followed by a secondary textured 60 mil **GSE HD** liner, a geocomposite leak detection layer, a primary textured 60 mil **GSE HD** liner, another geocomposite layer for leachate collection, and 2 ft (0.6 m) of sand as a protective cover layer.
2. **Double liner system:** This system provided dual barriers against leachate penetration into the groundwater, essential due to the environmental sensitivity of the area.
3. **Time-sensitive installation:** The entire installation was completed within a tight six-month window to avoid the rainy and hurricane seasons, demanding precise coordination among contractors and suppliers.

Solmax, along with Glover Construction and GSI, formed this core team. Solmax was responsible for manufacturing and supplying the custom geosynthetic materials required for the landfill liner system.

The effective collaboration among Solmax, Glover, HDR and GSI underscores the importance of selecting partners

who provide both technical expertise and an understanding of environmental sensitivities. Solmax's role was crucial in ensuring that the materials used met the highest standards of quality and sustainability, contributing significantly to the project's success. This team's efforts resulted in a landfill expansion that not only complied with all regulatory standards but also set a benchmark for future environmentally sensitive projects.

The Sarasota Landfill expansion, with its 62 acre (25 hectare) scope, was the largest single landfill installation project at the time in Florida. It showcased how innovative engineering solutions could meet complex environmental challenges effectively. The installation, tested by seasonal storms, proved resilient, affirming the effectiveness of the engineering solutions deployed.

The successful completion of the Sarasota Municipal Landfill expansion exemplifies the power of integrated teamwork and quality assurance in large-scale environmental engineering projects. It demonstrates a forward-thinking approach to sustainable waste management, ensuring long-term environmental protection and operational efficiency for Sarasota County.



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